



CONTROL OF THE SPREAD OF CORONAVIRUS DISEASE PANDEMIC AMONG SECONDARY SCHOOL STUDENTS IN NIGERIA: ADDITIONAL RESPONSIBILITY FOR BIOLOGY TEACHERS

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ABSTRACT

The aspiration of every living individual is to continue to enjoy 'good' health. Incidentally, some organisms both visible and invisible tend to distort the normal health of other organisms. The most disturbing is the actions of invisible ones such as viruses which are invisible to naked eyes except with electron microscope and naturally proved very difficult to capture physically. This paper then identifies some of the viruses that affect humans and cause different ill health. The most ravaging one currently is the corona virus of 2019, alternatively called SARS-COV-2 or COVID-19. The paper looked into the structure of this virus, its mode of contact, its symptoms in humans when contracted. Then, the steps biology teachers could take to educate the secondary school students in controlling the spread of COVID-19. These steps are in line with the directives of centre for disease control and World Health Organization. Such steps are: Wearing of face mask especially in public places, avoiding hand shake or skin to skin contact with people, washing hands often with soap and clean running water, applying alcohol-based sanitizer on hands, maintaining social distancing, inhaling steam as well as taking warm water regularly among others. Recommendations were made on how to improve and Sensitize students to adhere to COVID-19 protocols in order to control the spread of the virus.

Keywords: Corona virus, Biology, teachers, students, school environment and controlling the spread of COVID-19

INTRODUCTION

Some creatures existing in and around us are micro organisms which are most likely found in air, water, soil, mouth cavity, on the skin, inside the ears, nose, decomposed organic matter, food, under the fingernails and so on. Micro organisms are tiny organisms which are invisible to the naked eye and can only be seen with the help of microscope (Umeh, 2015). These invisible organisms distort our normal health, thus, it is pertinent to have knowledge of their types which include: viruses, bacteria, protozoa, some fungi and some algae.

Viruses as described by Umeh (2015), are non-cellular organisms, without nucleus, cytoplasm and cell membrane. They are invisible under light microscope but highly visible



with electron microscope. Viruses possess one peculiar characteristic of living things which is reproduction (replication) and can only exhibit such character when inside the body of living things. It attacks the health of man and other animals and causes a lot of havoc. Specifically, it infects man with such diseases like poliomyelitis, measles, infective hepatitis (Jaundice), Acquired Immune deficiency syndrome (AIDS), Influenza, Mumps, dengue fever, Chickenpox, Shingles, herpes, Ebola etc.

Consequently, viruses are of many types especially the more dangerous ones that affect humans such as Marburg virus, Ebola virus, Hanta virus, bird flu, Lassa virus, Junin virus, crimes congo fever virus, Machupo virus, kyasanur forest virus, Dengue fever virus, Human Immune Virus (HIV), among others.

Coronaviruses (COVs).

There are typical virus called Corona-viruses (COVs). They are in the family of viruses that cause respiratory and intestinal illnesses in human and other animals. Seven identified kinds of corona viruses affect humans specifically. They are Human Coronavirus NL 63 (HCOV N-L63), Human Coronavirus-229E (HCOV-229E), Human Coronavirus-0C43 (HCOV-0C43), HKUI, Severe Acute Respiratory Syndrome Coronavirus (SARS-COV), Middle East Respiratory Syndrome

Coronavirus (MERS-COV) and lastly Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-COV-2) or coronavirus disease 2019 (COVID-19). The first four kinds of coronavirus are common with mild respiratory illness but not until 2002-2003 in China that SARS-COV epidemic occurred posing severe respiratory illness and also, in 2012, another type of severe respiratory illness known as MERS- COV emerged in Saudi Arabia. Then, in December 2019, a more dangerous, mysterious and novel type of corona virus known as COVID-19 which is officially called SARS-COV-2 was identified in Wuhan Hubei province of China.

It was first of its kind thus caused an outbreak of respiratory illness and resulted in the lost of millions of lives worldwide. It was initially reported to World Health Organization (WHO) on December 31st 2019. Global research and innovation forum (2020) reported that on January 30th, 2020, WHO director general declared the COVID-19 outbreak a global emergency which resulted in many lives being lost, businesses collapsed, financial houses, productions and other human engagements came to stand still. Public religious activities were reduced to the barest minimum. All these in connection to lock down mentality in order to save life. On March 11, 2020, WHO declared COVID- 19 a global pandemic that is, disease affecting all people; Male, Female, Young, Old in the entire country, continent or the whole world.

In Nigeria, the stress of the contact of the disease became too severe that Public gathering was bycotted, night clubs, bars, restaurants ceased to operate. Hotels clients vacated, public religious activities reduced to the extent that in anticipation of crowding due to Easter activities on April 2020, Christians were warned to celebrate masses and other religious observances in their individual homes. Though, Christian Association of



Nigeria (CAN) was regulating the activities of the Churches (Eze, 2021). There was total lock down in the country. During the lock down of 2020 because of COVID-19 pandemic in Nigeria, individuals, philanthropists, non- governmental organizations (NGOs), religious groups and others were donating palliatives that were given to the less-privileges to ease off the pains of lock down. The centre for disease control (CDC) was trying every effort to arrest the situation.

The institutions of learning in Nigeria from Nursery to higher levels were highly affected as they experienced lock down for nearly one year. So many school activities were done on-line. The situation was terribly bad in 2020 and part of 2021. Even though, the pandemic is subsiding in later 2021, there is still fear for the third wave of the pandemic (Muanya & Ugoeze 2021). That was why, the director of the Africa CDC, Nkengasong (2021) advised that African nations should not relent but remain resilient and deny the opportunity for the virus to spread.

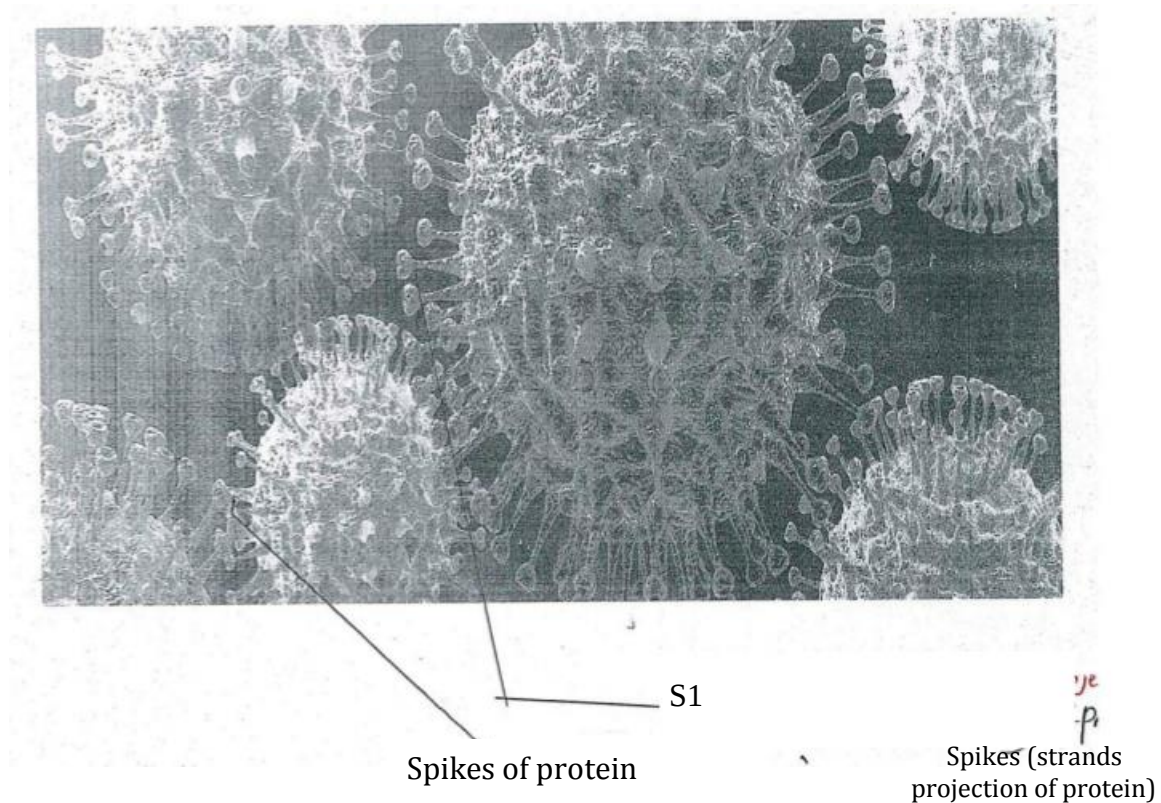
Structure of the Coronavirus

Corona-viruses have relatively simple structure and their form helps to understand how they work. They are spherical and coated with spikes (projections) of protein. These spikes help the Virus bind to and infect healthy cells. They are named for the distinctive appearance of their spikes. Thus, when they are seen. under powerful microscope, the spikes look like a crown (corona is crown in Latin). Beneath these spikes of protein is a layer of membrane which can be disrupted by soap/alcohol and that is why water, soap and alcohol sanitizer are effective against the virus.

Inside these membrane is genetic material called (genome). Unlike some other viruses which have deoxyribonucleic acid (DNA) as their genome, the corona- viruses have ribonucleic acid (RNA) as their genome. RNA viruses have small genomes which are subject to constant changes (mutating). These constant changes (Mutation) help the corona virus adapt to and infect new host species (victims). The new SARS-COV-2 (COVID- 19) most closely related to a group of SARS-COV found in humans, bats, pangolins and civets some time ago. Though, they are similar but the genome of COVID- 19 differ especially in mode of contact (highly contagious, faster multiplicity and symptoms differences) from that of SARS COV. Even, the victims of COVID-19 can infect others without manifesting symptoms (Wu, Zhao, Yu, 2020).



Structure of Corovirus



Mode of Contacts

1. Through skin to skin contact with infected person (hugging, embracing, pecking, hand shaking and using the same hand to touch the mouth, nose, eyes, face).
2. Staying too close when the infected person is coughing, sneezing, talking or breathing.
3. Sharing personal belongings with infected person like clothes, dishes, spoons, cups, shoes, combs etc. All these ways promote the contracts of COVID-19.

Symptoms

The symptoms of COVID-19 as listed by Lauren (2021) include: dry cough, fever or chills, difficulty in breathing, muscles or body aches, sore throat, lymphopenia fatigue, loss of taste or smell, diarrhea, headache, nausea or vomiting, congestion or running nose, among others. Lauren added that some people experience mild symptoms of COVID-19, others moderate while some others have severe symptoms and most likely older ones with already



severe health challenges. Chronic stage of COVID- 19 can lead into heart muscles damage, nervous system problems, kidney failure and outright death.

Diagnosis

If one feels these symptoms, it is advisable to see the doctor or visit the centre for disease control (CDC) for diagnosis and the only diagnosis for COVID- 19 is Laboratory test.

The biology teachers have additional responsible in controlling the spread of COVID-19 (SARS-COV-2) among Secondary School students because, based on the nature of biology scheme of works, biology teachers have been treating micro- organisms among which are (viruses) but this 2019 identified kind of virus is novel in the system and devastating to human health and resources. Even, when the school resumed on January 18, 2021 after a long period of lock down, the parents, teachers and doctors were gripped with anxiety and fear on the fate of the school children (Dike, Eze, Osuyj and John, 2021). Therefore, biology teachers should be at the vanguard of the campaign on how to control the Spread of COVID- 19 following the directives of COVID -19 protocols as mapped out by centre for disease Control (CDC) along with World Health organization (WHO)

STEPS TO CONTROL THE SPREAD OF COVID-19 AMONG SECONDARY SCHOOL STUDENTS.

1. The biology teachers should help to arrange and mount buckets with clean water at every corners of the school and in each classroom thus sensitizing the Students to wash their hands regularly and carefully for at least 20 seconds on a running water with Soap. For thorough washing, students should move the lather to the wrists, between fingers and under the finger nails. Rewashing is advisable especially after bringing Packages into the class, touching phones, labtop and other valuable things.
2. The biology teachers should instruct the students to apply alcohol-based hand sanitizer when it is difficult to wash hands.
3. The biology teachers should advice the students to clean and disinfect surfaces, tables, lockers, chairs, desk and doorknobs and wash their hands or apply hand sanitizer immediately after.
4. Biology teachers are to educate the students on the importance of avoiding social gatherings or group meetings rather should always maintain social/Physical distancing of about 2 meters away from each other both in the class or elsewhere to scare the virus from entering into the body.
5. Biology teachers should instruct the students to wear face mask especially in public places and places where social distancing is relatively difficult. Though, wearing of face



mask should go with washing of hands and social distancing. Also, students are advised by Biology teachers to wash the mask immediately after use and should not touch the front of the mask to avoid infecting the mask.

6. The biology teachers should advice the school authority to provide temperature thermometer which will help to detect the students that have the infection and isolate them so that they will not infect others.

7. The Biology teachers should also suggest to the school authority to provide functional sick-bay where identified victims will be quarantined until their parents / guardians come to collect them.

8. Students should avoid touching any part of their face or head including the mouth, nose, eyes, fingernails indiscriminately. Infact, they should avoid skin to skin contacts with people like (handshake, hugging, pecking, kissing etc) as they can easily get the virus by doing so.

9. Students should avoid eating in public places or eating cold food from restaurants or buffets. Taking thoroughly cooked food or food which can be reheated is more adviceable to avoid the virus from penetrating into the body.

10. Students should engage in self-quarantine if they feel sick or feel COVID- 19 symptoms and subsequently visit the hospital for proper treatment.

11. Students should be adviced by biology teachers to stop sharing personal items like phones, make-up, combs, clothes, eating utensils, shoes, straw, cups and others with infected persons.

12. Students should be adviced by biology teachers to practice steam-inhalation after going out of the house and take warm water as well, since such therapy can kill the virus outright.

13. Also, students are instructed by biology teachers to use tissue while sneezing or coughing or place their face around their elbow when sneezing or coughing to keep the hands always clean or wash the hands immediately after.

14. Students are adviced by biology teachers to wash all edible products under running water before eating and eat more of alkaline fruits that are above the P^H range 5.5-8.5 of the coronavirus. Such fruits like banana $9.9P^H$, Pineapple $12.7P^H$, oranges, avocado pears — $P^H15.6$, 'mango - $P^H8.7$, Lime $9.9P^H$ etc. so as to neutralize the acidity range of coronavirus.



15. Since administering of COVID-19 vaccine is optional, the biology teachers should advice the students to go for the vaccine if they feel safe with it.

The biology teachers undiluted efforts and suggestions to curtail the spread of COVID-19 among students will be effective and fruitful if the students are responding maximally and ready to accomplish their own roles.

CONCLUSION

Many viruses have been ravaging' our environment causing dangerous diseases and illnesses to humans. The most current virus which the whole world is battling to quench its actions on man is coronavirus of 2019 which has claimed millions of lives and still threatening for more. As rational beings, we should device strategies to curtail its spread and excesses. Since it operates mostly in group gathering, socialization and body contact, it is of great advantage that the students who always stay together in groups in schools and classes, should endeavour to follow these COVID- 19 protocols religiously as guided by the biology teachers to save their lives.

RECOMMENDATIONS

Based on the fore-goings, the following recommendations are made:

1. There is need that other teachers should join hands with biology teachers to ensure that the students observe all the COVID- 19 protocols often.
2. The government agencies, the non-governmental organizations (NGOs), religious groups and other good spirited individuals should help to donate materials as well as money and supply those requirements for combating COVID- 19 in Schools and should also monitor the distribution of these materials.
3. Class-teachers should make sure that students come to the class with their personal hand-sanitizer and face mask so as to escape from the torture of COVID-19.
4. Medical teams should organize enlightenment campaigns concerning how to control the spread of COVID-19 especially in rural schools.

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